

grammaring – an analysis

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stonemason's todo list for today

- i) fetching the stones for the pillars from the quarry (wo)men ^{theoretical}
- ii) getting the sediment stones ^{from the learners} in shape (like the banker masons)
- iii) fixing the stones onto the building ^{of sla} as the fair masons do

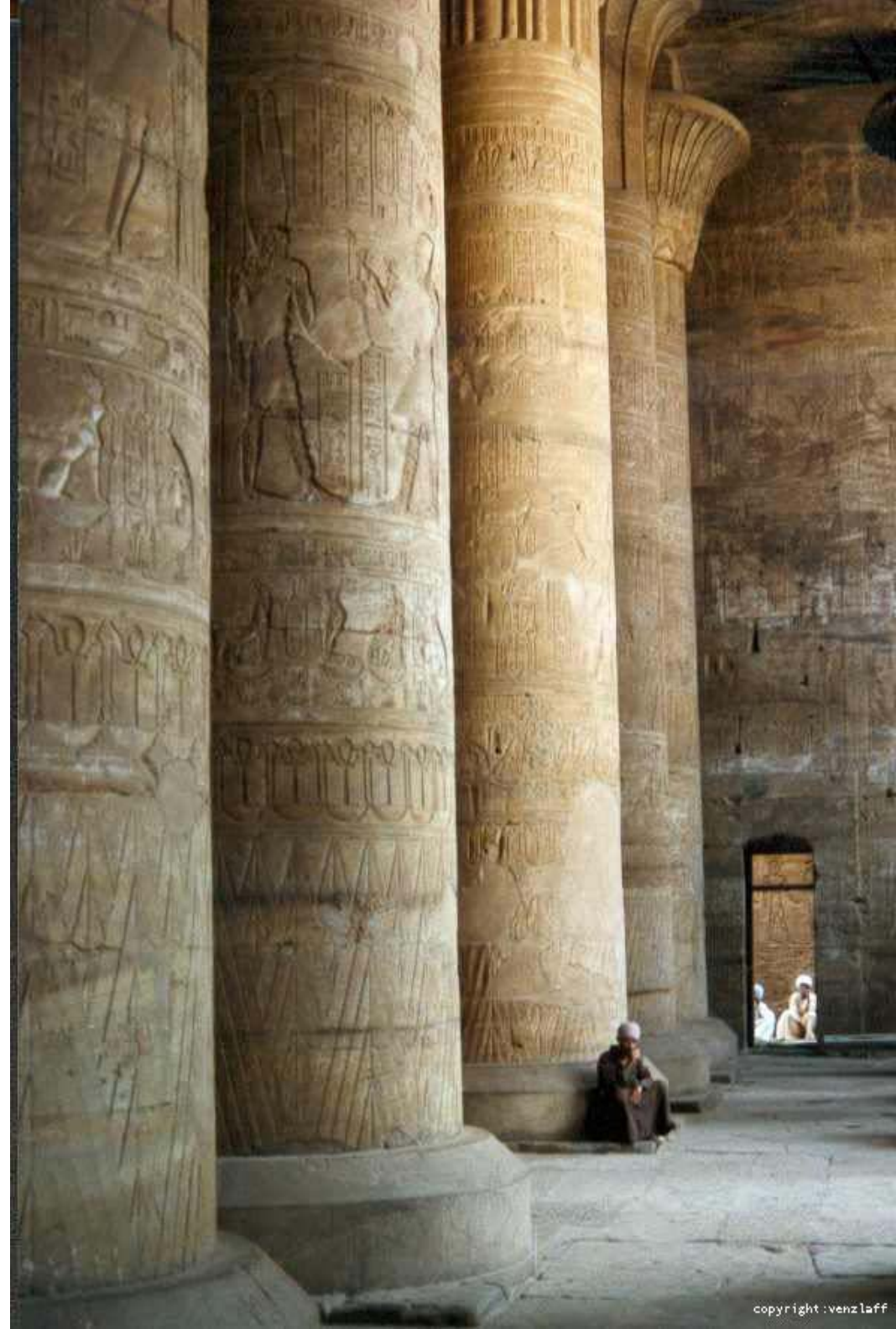
 *wallpecking ...*



modelling online language learning processes
contribution to student modelling
computational analysis of texts

the theoretical

- **grammaring** the stone
- a **dynamic** and **complex** system of pebbles, stones, and rocks
- the apprentice masons as an **activity system**
- **construction** of patterns of use



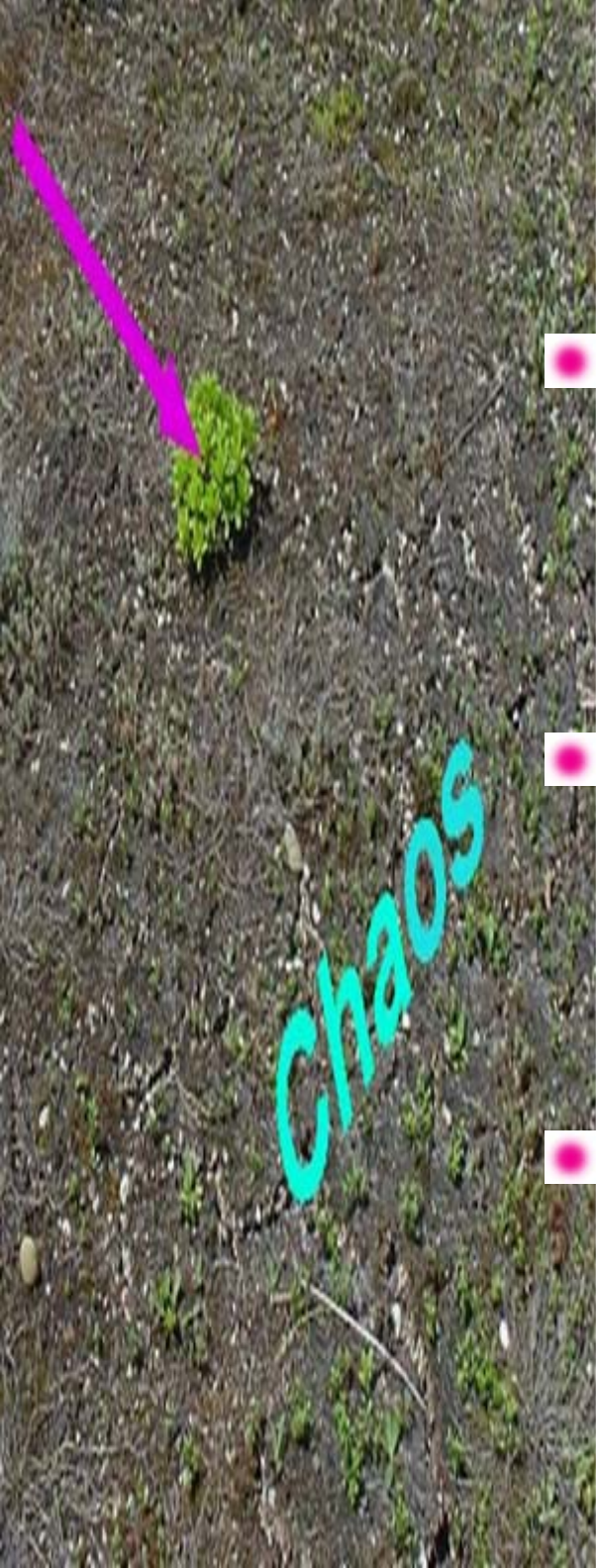
grammaring

“For the purposes of teaching and learning a language,
I suggest that it would be better to think of



grammar as a skill or dynamic process,
something that I have called *grammaring*,
rather than as a static area of knowledge.”

(Larsen-Freeman, 2003, p.24)



sla as a dynamic and complex system

- **chaos** theory (lorenz, 1993; gleick, 1987);
complexity theory (waldrop, 1992); **dynamic systems** theory (katok and hasselblatt, 1996; van geert, 1994)
- **dynamic:** non-linear, non-periodic change over time; language change through language use (larsen-freeman, 1997; cf. ellis, 2003 and discussion of probabilistic parsing)
- **complex:** multivariate analysis, analysis of complex variables in context, importance of initial conditions (larsen-freeman, 1997; ellis&larsen-freeman, 2006; de bot et al., 2007; larsen-freeman&cameron, 2008)

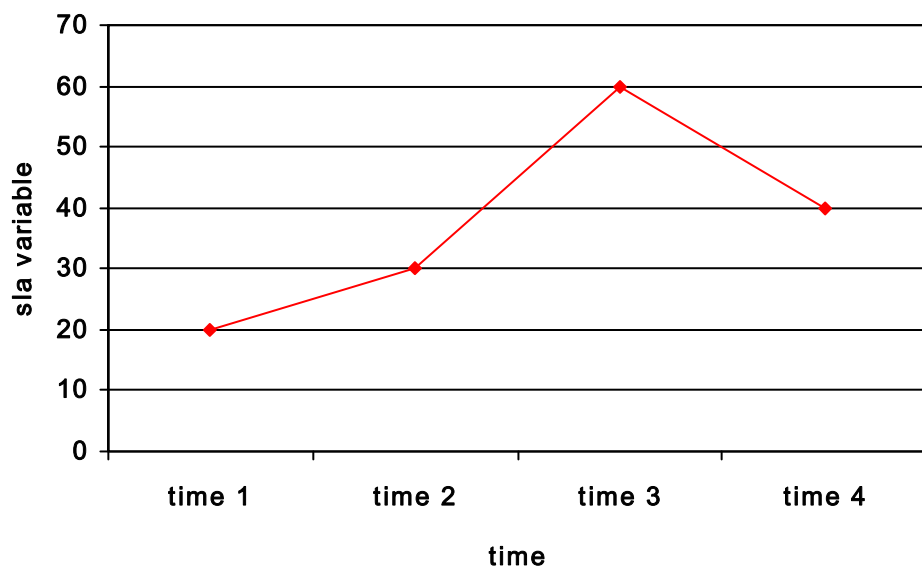


Being [an applied linguist] and applying dynamic systems theory is almost like begging for trouble. ... As a rule, the mathematician will treat the [applied linguist's] dynamic models the same way as a kindergarten teacher evaluates a toddler's proudly made scribbles, knowing that the child in question deserves encouragement and that the way leading to a decent drawing ... is still extremely long and arduous.

(van geert and steenbeck, 2005, p. 408-9)

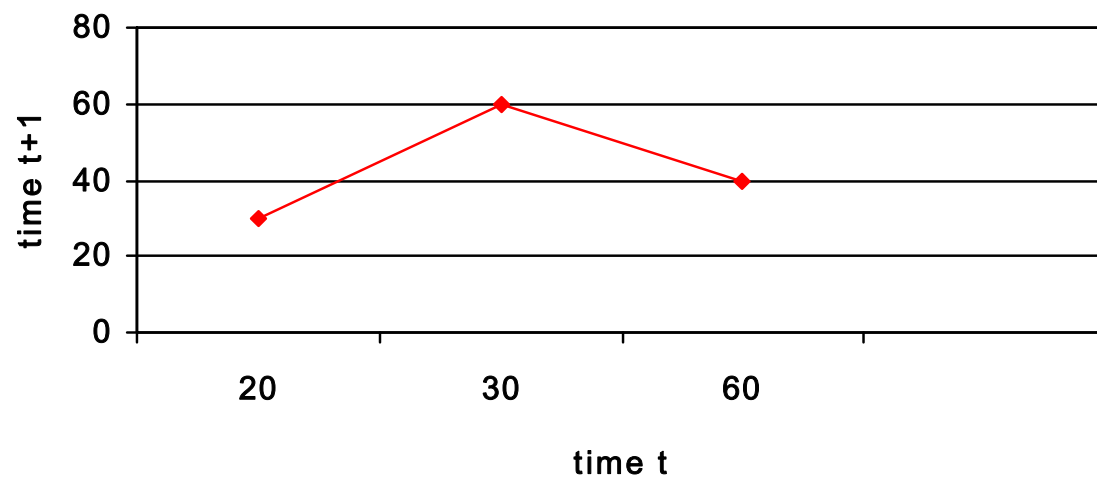
$$x_{t+1} = f(x_t)$$

time series

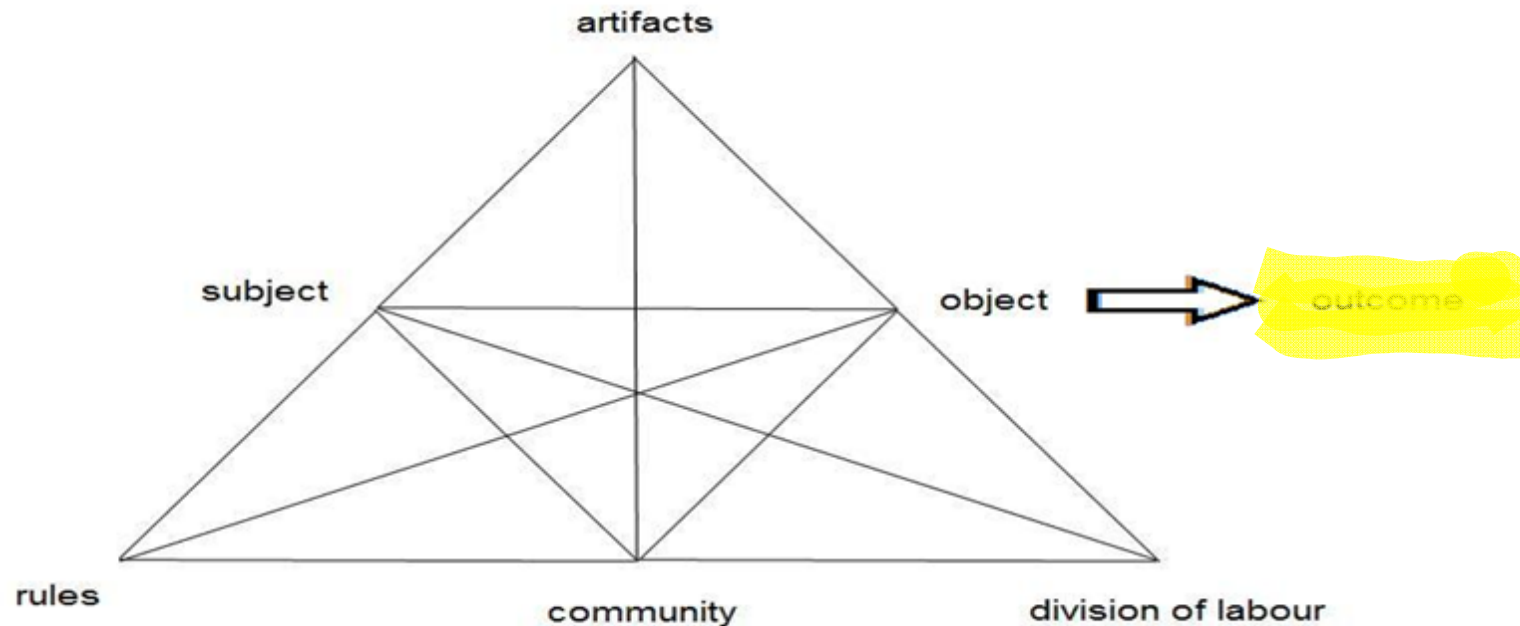


$$\Delta((t+1)-t) = \text{lag}$$

phase space



sla as an activity system



(выготский, 1934; рубинштейн, 1940; гальперин, 1966;
леонтьев, 1977; engeström, 1987; thorne, 2005;
lantolf&thorne, 2006)



construction grammar

- constructions =
“recurrent patterns of linguistic elements that serve some well-defined linguistic function” (ellis, 2003, p.66)
- form-meaning mappings
 - form = phonology, morphology, syntax
 - meaning = semantics, discourse, pragmatics

(goldberg, 1995; kay, 2002;
steels&de beule, 2006)





Construction

Form
Meaning
Gradience

Gradience

COMPLEXITY
ACCURACY
APPROPRIATENESS



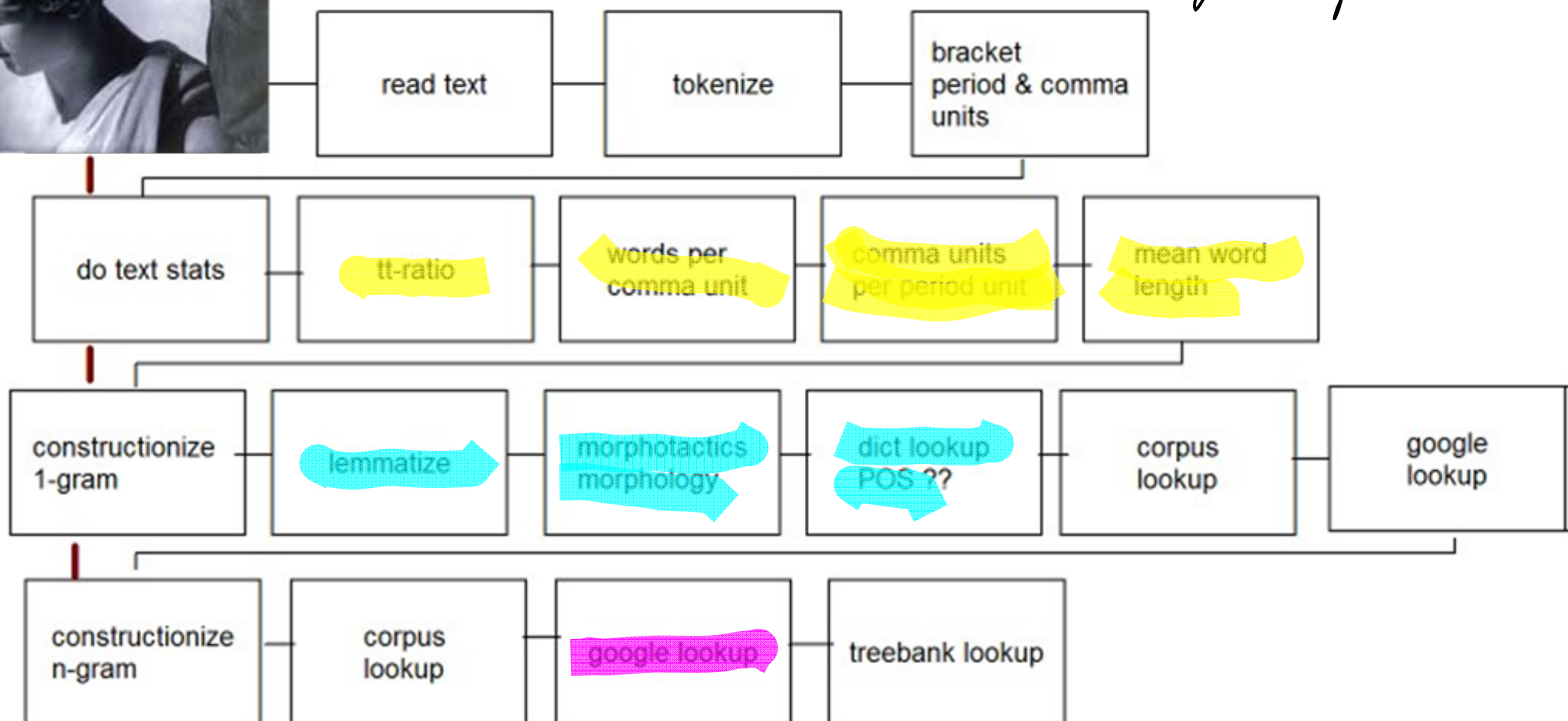
MORPHOLOGY

SEPARABILITY	
LEMMA	
POS	
VERB	WEAK VERB
	STRONG VERB
	MIXED VERB
	PRAET VERB
	MAIN VERB
	AUXVERB
	MODAL VERB
	FINITE VERB
	PAST PARTICIPLE
	PRES PARTICIPLE
	INFINITIVE
NOUN	MAIN NOUN
	PROPER NOUN
	PERSONAL PRONOUN
	DEMONSTRATIVE PRONOUN
	INDEFINITE PRONOUN
	QUANTIFICATIVE PRONOUN
	W PRONOUN
	POSSESSIVE PRONOUN
	DEFINITE ARTICLE
	INDEFINITE ARTICLE
CONNECTOR	POSTPOSITION
	PREPOSITION
	SUBORDINATING CONJUNCTION
	COORDINATING CONJUNCTION
	DISCONTINUOUS CONJUNCTION
ADJECTIVE	PRENOUN ADJ
	ADCOPULA ADJ
	ADVERB ADJ
ADVERB	PARTICLE
	MAIN ADVERB
INTERJECTION	RESPONSIVE INTERJECTION
	MAIN INTERJECTION



chipping away

Complexity
accuracy
ling. information



complexity



- lexical

- type-token ratio (lemmas and word forms) (c. larsen-freeman, 2006)
- mean word length (attali&burstein, 2006) (test empirically for german)

- syntactic

- words per comma unit
- comma units per period unit (skehan&foster, 1997; larsen-freeman, 2006)

accuracy

■ unigram

■ morphological
analysis and
dictionary lookup
(wood, 2008)

■ corpus lookup

■ google lookup (shei,
2008)

■ 2-gram, ..., 5-gram

■ corpus lookup

■ POS sequence
lookup in a
treebank (tiger, negra)

an emerging sculpture ...

- results from weekly text production tasks, which students submitted online, are analyzed (lag time, time series events)
- complexity of texts as well as accuracy of n-grams are approximated => complex set of numerical values
- numerical values are graphed in time series and phase space to gain a better understanding of **grammaring**



gabriela baechinger
(http://gabrielastagebuch.blogspot.com/2007_05_01_archive.html)

*mensch im begriff von
gott verschluckt zu
werden*